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Fake Currency Detection Using Image Processing

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ABSTRACT :

The production of duplicate notes and phoney currency notes has expanded significantly due to advancements in colour printing technology. Printing used to be done in printing houses until recently, but now that everyone has a printer at home, it is possible to print phoney currency as accurately as possible. As a result, bogus currency now predominates over actual currency available in our market. Daily reports of phoney currency frauds make the fake currency problem clear. Since there is no software to distinguish between fake and real currency, it has become more simpler to produce counterfeit money thanks to technological advancements like computers, scanners, and duplicates.

Numerous issues, including fraud, black market transactions, and corruption, plague India.

1. INTRODUCTION

Fake currency has always been a concern that has brought up a lot of issues in the market.

The potential to generate more has been made possible by the rapid growth of technology.

The market is filled with counterfeit money, which drags down the nation's economy as a whole. In order to verify the currency's legitimacy, devices are available at banks and other business areas. A software to identify phoney currency that can be utilised by regular people is needed because the average person does not have access to such systems. To determine if the coin is real or fake, this proposed system uses image processing. Python is the only programming language that was used in the system's development. There are several phases involved, including grayscale conversion,

2. EXISTING SYSTEM

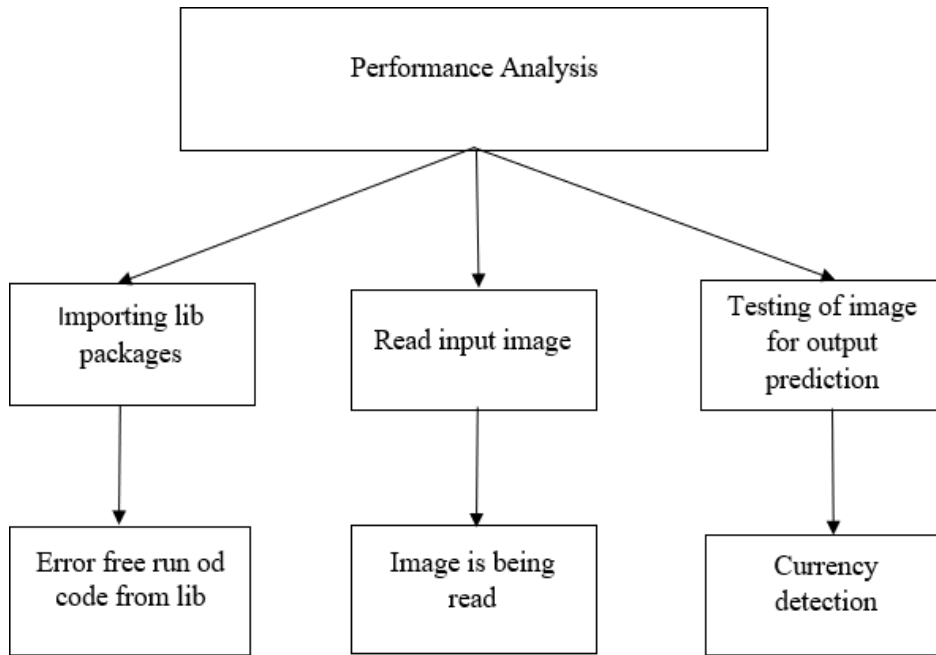
In banking systems and other areas of trade, an automated system for recognising paper money can be of great use. India is one of the countries whose financial systems are challenged by the widespread counterfeiting of paper money that has been going on for many years. The recognition of paper cash using digital image processing techniques is detailed in this article. Identification marks, security threads, and watermarks are the three features of Indian paper currency that were chosen for counterfeit detection. The extracted properties are applied to the image of the cash and contrasted with those of the real thing. For the banking system, it is crucial that paper currency is recognised with high precision and processing speed. The simplicity and quickness of the suggested method are advantages. According to the findings of the experiment,

3. PROPOSED SYSTEM

Image processing is being used by the suggested method to find the cash. The system is given a photographed or scanned image, which can be a .png file, and the result indicates whether the cash is genuine or not. Techniques used in the process include feature extraction, feature comparison, segmentation, edge detection, and picture preparation.

4. PERFORMANCE EVALUATION

Performance: Several performance criteria, including checks for inputs, outputs, and functionality, were established.



Environmental: Environmental parameters are unharmed. Social: Accessibility in everyone's daily lives.

Accuracy: Performance data obtained using sampling methods typically have lower accuracy than data gained through the use of counters or timers. The accuracy of the clock must be considered in the case of timers.

simple: approachable.

Flexibility: A flexible can be readily expanded to gather more performance data or to present several perspectives on the same data. Simplicity and flexibility are frequently incompatible demands.

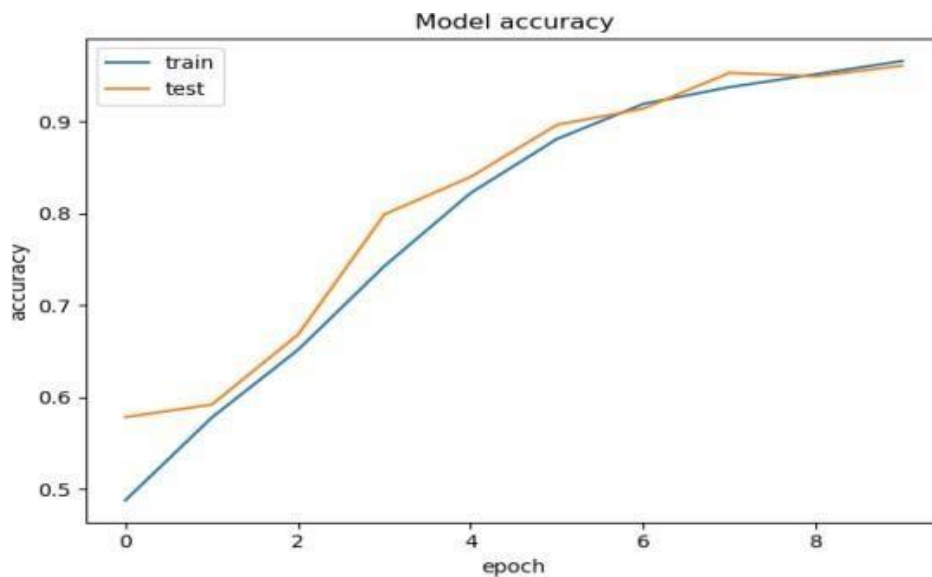


Figure 8.2: Accuracy of CNN model

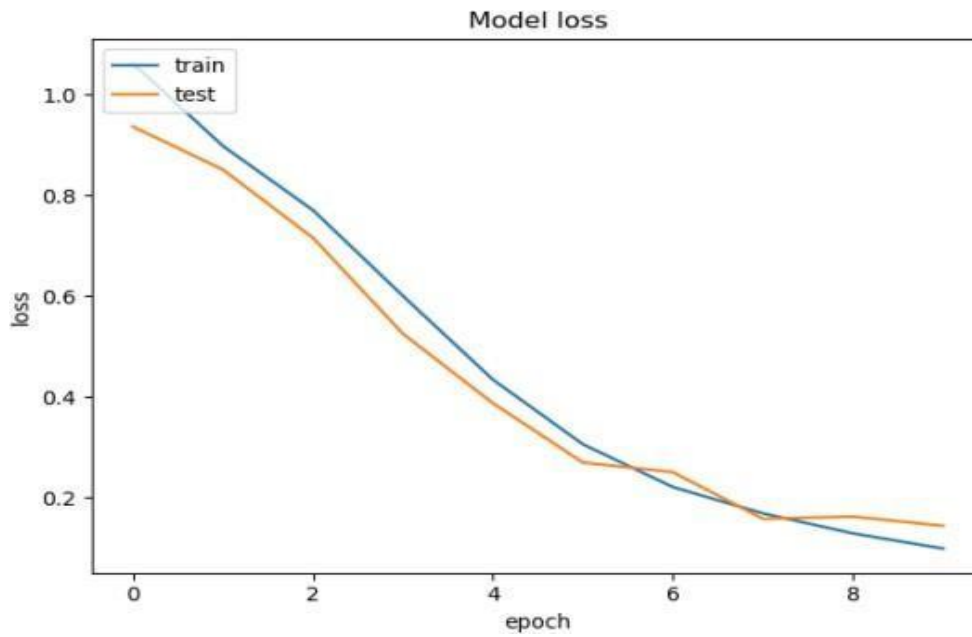
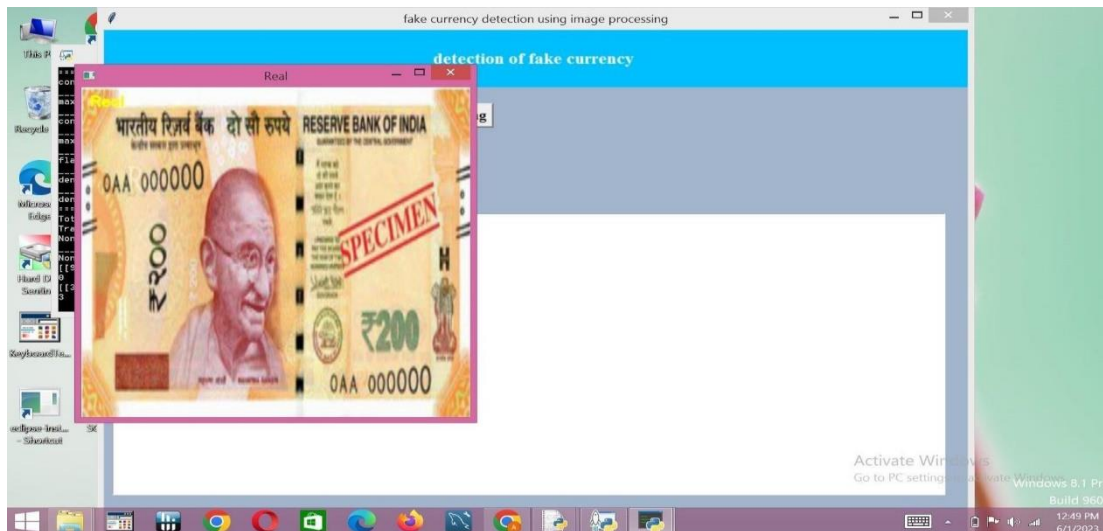


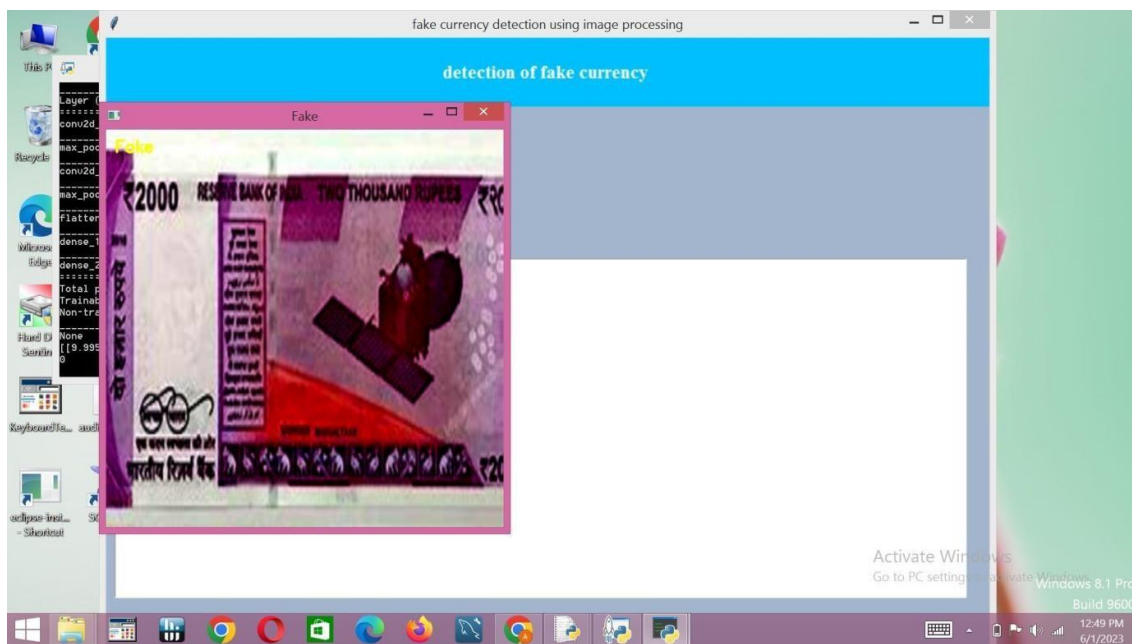
Figure 8.3: Loss of CNN model

The graph of accuracy with respect to epochs is displayed in Figure 8.2. It has been found that the model's accuracy grows together with the number of epochs.

Additionally, Figure 8.3 illustrates the loss function, and it is evident that the loss declines as the number of epochs rises.

5. RESULT





6. CONCLUSION

In this research, an algorithm for recognising cash through image processing is proposed. The suggested method recognises objects using the primary colour and a portion of cash. Using the average brightness of R, G, and B, we distinguished between different monetary denominations. This is the first circumstance that acknowledges the currency. Then, in order to verify the currency, we separated the pattern from the currency and used template matching.

Our cash recognition method based on image processing is quite quick and accurate, according to an experiment conducted by a programme based on the aforementioned algorithm. However, there are numerous problems with such a system. The quality of the sample cash and the degree of paper currency degradation will have an impact on the rate of recognition

7. ACKNOWLEDGEMENT

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8. REFFERENCES

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eBook: Basics of Image Processing